Entergy Operations, Inc.
17265 River Road
Killona, LA 70057-3093
Tel 504-739-6028

John Lewis
Manager, Regulatory Assurance

10 CFR 50.73

W3F1-2021-0069

November 22, 2021

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Licensee Event Report (LER) 2021-002-00
Loss of Offsite Power Due to Hurricane Ida

Waterford Steam Electric Station, Unit 3
NRC Docket No. 50-382
Renewed Facility Operating License No. NPF-38

Reference: Entergy Operations, Inc. letter to U.S. Nuclear Regulatory Commission, "Licensee Event Report (LER) 2021-001-00, Loss of Offsite Power Due to Hurricane Ida," (ADAMS Accession No. ML21301A192), dated October 28, 2021

Entergy Operations, Inc., submits the enclosed Licensee Event Report (LER) 2021-002-00 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). The event is reportable in accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.73(a)(2)(iii) as any natural phenomenon or other external condition that posed an actual threat to the safety of the nuclear plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant. The event is also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) for the automatic actuation of the Emergency Diesel Generators and manual actuation of Emergency Feedwater.

The enclosed LER is a resubmittal of the Reference LER 2021-001-00 submitted on October 28, 2021 to correct the report sequence number, which should have been reported as 2021-002-00. The enclosed LER provides the correct sequence number (2021-002-00) for the previously reported event. Vertical lines have been placed in the right margin of the enclosed LER to indicate the revised sequence number and report date. There are no other changes to the LER.

This letter contains no new regulatory commitments.

If you have any questions or require additional information, please contact John Lewis, Regulatory Assurance Manager, at 504-739-6028.

Respectfully,

JL/cdm

Enclosure: Waterford 3 Licensee Event Report (LER) 2021-002-00

cc: NRC Region IV Regional Administrator
NRC Senior Resident Inspector – Waterford Steam Electric Station, Unit 3
NRR Project Manager

ENCLOSURE

W3F1-2021-0069

Waterford 3 Licensee Event Report (LER) 2021-002-00

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. Facility Name	2. Docket Number	3. Page
Waterford Steam Electric Station, Unit 3	05000 - 0382	1 OF 4

4. Title

Loss of Offsite Power Due to Hurricane Ida

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
									N/A	05000 N/A
08	29	2021	2021	002	00	11	22	2021	Facility Name N/A	Docket Number 05000 N/A

9. Operating Mode	10. Power Level
4	0

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

☐ **Other** (Specify here, in Abstract, or in NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include Area Code)
John Lewis - Manager, Regulatory Assurance	(504) 739-6028

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To IRIS	Cause	System	Component	Manufacturer	Reportable To IRIS

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☒ No ☐ **Yes** (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 1804 Central Daylight Time (CDT) on August 29, 2021 with the unit in MODE 4 (Hot Shutdown) and a cooldown in progress, Waterford Steam Electric Station, Unit 3 (Waterford 3) experienced a Loss of Offsite Power (LOOP) event due to Hurricane Ida. This event caused an automatic actuation of Emergency Diesel Generator (EDG) Trains A and B. Both EDGs started as designed and operated normally to supply power to their respective Class 1E Safety Buses. Following power restoration to the Safety Buses, the cooldown was resumed in accordance with procedural guidance. The LOOP event required starting one train of Emergency Feedwater (EFW) to restore feedwater to the Steam Generators for decay heat removal. There were no plant equipment failures that contributed to this event. The automatic actuation of the EDGs and manual actuation of EFW were reported pursuant to 10 CFR 50.72(b)(3)(iv)(A). The notification of unusual event due to the LOOP that resulted from Hurricane Ida was reported pursuant to 10 CFR 50.72(a)(1)(i).

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

(See NUREG-1022, R.3 for instruction and guidance for completing this form https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Waterford Steam Electric Station, Unit 3	05000 - 0382	2021	002	00

NARRATIVE

Plant Conditions:

At the time of this event, Waterford Steam Electric Station, Unit 3 (Waterford 3) was shutdown in MODE 4 (Hot Shutdown). A plant cooldown was in progress using both Atmospheric Dump Valves (ADVs) [SB, PCV]. There were no structures, systems, or components out of service that contributed to this event.

Event Description:

Waterford 3 has two redundant sources of offsite power that are provided by seven separate transmission lines connected to the Waterford 3 230 kilovolt (kV) switchyard [FK].

On August 29, 2021 at 1804 Central Daylight Time (CDT) with the plant in MODE 4, Waterford 3 experienced a Loss of Offsite Power (LOOP). This resulted in the Train A and Train B Emergency Diesel Generators (EDGs) [EK] starting automatically and powering their respective Safety Buses [EB]. This event also resulted in the operators manually starting Emergency Feedwater (EFW) Pump A [BA, P] to feed the Steam Generators [SG].

Event Timeline:

On August 26, 2021, Waterford 3 entered off-normal procedure OP-901-521, "Severe Weather and Flooding," in response to a Hurricane Watch being issued for St. Charles Parish due to Hurricane Ida. Waterford 3 personnel commenced the procedurally required hurricane preparations.

On August 27, 2021, a Hurricane Warning was issued for St Charles Parish, and hurricane preparations continued. Frequent storm preparation meetings were held by the Waterford 3 management team while monitoring the projected track of Hurricane Ida and its potential impacts to the site.

On August 28, 2021, Waterford 3 determined a plant shutdown would be required as directed by OP-901-521 due to the hurricane conditions projected by the National Weather Service to reach the Waterford 3 site.

On August 29, 2021, at 0813 Central Daylight Time (CDT), control room operators commenced a plant shutdown.

At 1031 CDT, Waterford 3 entered MODE 3 (Hot Standby) after the control room operators manually shutdown the unit in accordance with OP-010-005, "Plant Shutdown."

At 1320 CDT, Waterford 3 commenced plant cooldown with both ADVs in manual.

At 1728 CDT, Waterford 3 entered MODE 4 with Reactor Coolant System (RCS) [AB] temperature <350 degrees Fahrenheit (F). Depressurization of the RCS was in progress for achieving Shutdown Cooling (SDC) [BP] entry conditions.

At 1804 CDT, Waterford 3 experienced a Loss of Offsite Power (LOOP). As a result, both running Reactor Coolant Pumps [AB, P], the running Spent Fuel Pool Cooling Pump [DA, P], and the Auxiliary Feedwater Pump [BA, P] lost power, in addition to numerous other plant components. The Train A and B Emergency Diesel Generators (EDGs) started automatically as designed on the LOOP actuation and operated normally to supply power to their respective Class 1E Safety Buses. The operating crew entered Emergency Operating Procedure OP-902-003, "Loss of Offsite Power/Loss of Forced Circulation Recovery," and Off-Normal Procedure OP-901-513, "Spent Fuel Pool Cooling Malfunction."

After the LOOP, RCS temperature increased and at 1806 CDT, the operating crew declared entry into MODE 3 based on exceeding 350 degrees F by representative Core Exit Thermocouple (CET) [AB, TE] temperatures. The operating crew manually adjusted the ADVs to stabilize and lower RCS temperature.

At 1812 CDT, Waterford 3 declared an unusual event due to the LOOP.

At 1827 CDT, the operating crew commenced lowering RCS temperature using the ADVs.

At 1837 CDT, the operating crew commenced aligning SDC Train A for service.

At 1848 CDT, the operating crew restored RCS temperature to <350 degrees F and declared entry into MODE 4.

At 1900 CDT, the operating crew manually started Emergency Feedwater (EFW) Pump A [BA, P] to feed the Steam Generators [SG] to preserve the secondary heat sink with both Main Feedwater Pumps [SJ, P] and the Auxiliary Feedwater Pump unavailable due to the LOOP.

At 1933 CDT, SDC Train A was placed in service.

At 2211 CDT, SDC Train B was placed in service.

At 2338 CDT, the plant entered MODE 5 (Cold Shutdown) with RCS temperature </=200 degrees F.

On August 31, 2021, at 2330 CDT, offsite power was restored.

At 2345 CDT, the unusual event was exited since offsite power was restored to both safety-related electrical buses.

On September 30, 2021, an engineering evaluation to validate the RCS temperature excursion that occurred following the August 29, 2021 LOOP was completed. The evaluation concluded that the station did not exceed MODE 4 conditions based on the RCS average temperature (T_{avg}) not exceeding 350 degrees F.

This report is made pursuant to 10 CFR 50.73(a)(2)(iii) as any natural phenomenon or other external condition that posed an actual threat to the safety of the nuclear plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant. This report is also made pursuant to 10 CFR 50.73(a)(2)(iv)(A) as any event or condition that resulted in manual or automatic actuation of the EFW system and EDGs.

Safety Assessment:

The LOOP is safety significant; however, the switchyard system operated as designed and disconnected transmission circuits from the switchyard buses when the integrity of the grid was challenged by the environmental conditions of Hurricane Ida. The plant was shutdown to MODE 4 in anticipation of a LOOP. Both EDGs started automatically and aligned to their respective safety buses as designed and thus provided electrical power for the other safety systems. Train A of EFW was manually started to feed the Steam Generators and operated normally until it was no longer needed, and was secured.

There were no significant equipment problems noted while maintaining shutdown conditions during and after the hurricane. Based on the above, the event did not have a significant effect on the health and safety of the public.

The potential consequence to general safety of the public, nuclear safety, industrial safety, and radiological safety of the LOOP event was eliminated by the mitigating action of the EDGs that started and loaded as required to support all necessary safety systems. Since the plant automatic response to the LOOP performed as required, there were no actual consequences to the general safety of the public, nuclear safety, industrial safety, or radiological safety for this event. Additionally, the EFW system was operated as directed by procedures to assist in plant cooldown and the system performed the function as designed.

Therefore, this event had minimal safety significance.

Event Cause(s):

The cause of the LOOP event was the damaging hurricane force winds, heavy rain, and localized flooding brought by Hurricane Ida. The effects of the hurricane resulted in damage to both sources of offsite power.

Corrective Actions:

The hurricane force winds experienced on August 29, 2021 were not considered a beyond design basis event. The systems and components responded as designed and the overall peak wind speeds were within the design basis for a hurricane event. The damage observed coincides with the amount of damage expected for the event. Given that this event was outside the control of Waterford 3 and that all components functioned as designed, no additional corrective actions beyond repair/recovery efforts related to the hurricane event are needed.

Previous Similar Events:

A review of the Waterford 3 corrective action program and LERs for the previous three years was performed. No similar events were found to be applicable.

Entergy Operations, Inc.
17265 River Road
Killona, LA 70057-3093
Tel 504-739-6028

John Lewis
Manager, Regulatory Assurance

10 CFR 50.73

W3F1-2021-0067

October 28, 2021

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: Licensee Event Report (LER) 2021-001-00
Loss of Offsite Power Due to Hurricane Ida

Waterford Steam Electric Station, Unit 3
NRC Docket No. 50-382
Renewed Facility Operating License No. NPF-38

Entergy Operations, Inc., submits the enclosed Licensee Event Report (LER) 2021-001-00 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). The event is reportable in accordance with Title 10 of the Code of Federal Regulations (10 CFR) 50.73(a)(2)(iii) as any natural phenomenon or other external condition that posed an actual threat to the safety of the nuclear plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant. The event is also reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) for the automatic actuation of the Emergency Diesel Generators and manual actuation of Emergency Feedwater.

This letter contains no new regulatory commitments.

If you have any questions or require additional information, please contact John Lewis, Regulatory Assurance Manager, at 504-739-6028.

Respectfully,

JL/rrd/cdm

Enclosure: Waterford 3 Licensee Event Report (LER) 2021-001-00

cc: NRC Region IV Regional Administrator
NRC Senior Resident Inspector – Waterford Steam Electric Station, Unit 3
NRR Project Manager

ENCLOSURE

W3F1-2021-0067

Waterford 3 Licensee Event Report (LER) 2021-001-00

NRC FORM 366 (08-2020) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 08/31/2023

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Library, and Information Collections Branch (T-6 A10M), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503; e-mail: oira_submission@omb.eop.gov. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.

LICENSEE EVENT REPORT (LER)

(See Page 3 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. Facility Name	2. Docket Number	3. Page
Waterford Steam Electric Station, Unit 3	05000 - 0382	1 OF 4

4. Title

Loss of Offsite Power Due to Hurricane Ida

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
									N/A	05000 N/A
08	29	2021	2021	001	00	10	28	2021	Facility Name N/A	Docket Number 05000 N/A

9. Operating Mode	10. Power Level
4	0

11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*

10 CFR Part 20	☐ 20.2203(a)(2)(vi)	☐ 50.36(c)(2)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(A)	**10 CFR Part 73**
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.69(g)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(4)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(i)	**10 CFR Part 21**	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(1)(i)
☐ 20.2203(a)(2)(ii)	☐ 21.2(c)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(i)
☐ 20.2203(a)(2)(iii)	**10 CFR Part 50**	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)	☐ 73.77(a)(2)(ii)
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)	
☐ 20.2203(a)(2)(v)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)	

☐ **Other** (Specify here, in Abstract, or in NRC 366A).

12. Licensee Contact for this LER

Licensee Contact	Phone Number (Include Area Code)
John Lewis - Manager, Regulatory Assurance	(504) 739-6028

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable To IRIS	Cause	System	Component	Manufacturer	Reportable To IRIS

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☒ No ☐ **Yes** (If yes, complete 15. Expected Submission Date)				

16. Abstract (Limit to 1560 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 1804 Central Daylight Time (CDT) on August 29, 2021 with the unit in MODE 4 (Hot Shutdown) and a cooldown in progress, Waterford Steam Electric Station, Unit 3 (Waterford 3) experienced a Loss of Offsite Power (LOOP) event due to Hurricane Ida. This event caused an automatic actuation of Emergency Diesel Generator (EDG) Trains A and B. Both EDGs started as designed and operated normally to supply power to their respective Class 1E Safety Buses. Following power restoration to the Safety Buses, the cooldown was resumed in accordance with procedural guidance. The LOOP event required starting one train of Emergency Feedwater (EFW) to restore feedwater to the Steam Generators for decay heat removal. There were no plant equipment failures that contributed to this event. The automatic actuation of the EDGs and manual actuation of EFW were reported pursuant to 10 CFR 50.72(b)(3)(iv)(A). The notification of unusual event due to the LOOP that resulted from Hurricane Ida was reported pursuant to 10 CFR 50.72(a)(1)(i).

1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Waterford Steam Electric Station, Unit 3	05000 - 0382	2021	001	00

NARRATIVE

Plant Conditions:

At the time of this event, Waterford Steam Electric Station, Unit 3 (Waterford 3) was shutdown in MODE 4 (Hot Shutdown). A plant cooldown was in progress using both Atmospheric Dump Valves (ADVs) [SB, PCV]. There were no structures, systems, or components out of service that contributed to this event.

Event Description:

Waterford 3 has two redundant sources of offsite power that are provided by seven separate transmission lines connected to the Waterford 3 230 kilovolt (kV) switchyard [FK].

On August 29, 2021 at 1804 Central Daylight Time (CDT) with the plant in MODE 4, Waterford 3 experienced a Loss of Offsite Power (LOOP). This resulted in the Train A and Train B Emergency Diesel Generators (EDGs) [EK] starting automatically and powering their respective Safety Buses [EB]. This event also resulted in the operators manually starting Emergency Feedwater (EFW) Pump A [BA, P] to feed the Steam Generators [SG].

Event Timeline:

On August 26, 2021, Waterford 3 entered off-normal procedure OP-901-521, "Severe Weather and Flooding," in response to a Hurricane Watch being issued for St. Charles Parish due to Hurricane Ida. Waterford 3 personnel commenced the procedurally required hurricane preparations.

On August 27, 2021, a Hurricane Warning was issued for St Charles Parish, and hurricane preparations continued. Frequent storm preparation meetings were held by the Waterford 3 management team while monitoring the projected track of Hurricane Ida and its potential impacts to the site.

On August 28, 2021, Waterford 3 determined a plant shutdown would be required as directed by OP-901-521 due to the hurricane conditions projected by the National Weather Service to reach the Waterford 3 site.

On August 29, 2021, at 0813 Central Daylight Time (CDT), control room operators commenced a plant shutdown.

At 1031 CDT, Waterford 3 entered MODE 3 (Hot Standby) after the control room operators manually shutdown the unit in accordance with OP-010-005, "Plant Shutdown."

At 1320 CDT, Waterford 3 commenced plant cooldown with both ADVs in manual.

At 1728 CDT, Waterford 3 entered MODE 4 with Reactor Coolant System (RCS) [AB] temperature <350 degrees Fahrenheit (F). Depressurization of the RCS was in progress for achieving Shutdown Cooling (SDC) [BP] entry conditions.

At 1804 CDT, Waterford 3 experienced a Loss of Offsite Power (LOOP). As a result, both running Reactor Coolant Pumps [AB, P], the running Spent Fuel Pool Cooling Pump [DA, P], and the Auxiliary Feedwater Pump [BA, P] lost power, in addition to numerous other plant components. The Train A and B Emergency Diesel Generators (EDGs) started automatically as designed on the LOOP actuation and operated normally to supply power to their respective Class 1E Safety Buses. The operating crew entered Emergency Operating Procedure OP-902-003, "Loss of Offsite Power/Loss of Forced Circulation Recovery," and Off-Normal Procedure OP-901-513, "Spent Fuel Pool Cooling Malfunction."

After the LOOP, RCS temperature increased and at 1806 CDT, the operating crew declared entry into MODE 3 based on exceeding 350 degrees F by representative Core Exit Thermocouple (CET) [AB, TE] temperatures. The operating crew manually adjusted the ADVs to stabilize and lower RCS temperature.

At 1812 CDT, Waterford 3 declared an unusual event due to the LOOP.

At 1827 CDT, the operating crew commenced lowering RCS temperature using the ADVs.

At 1837 CDT, the operating crew commenced aligning SDC Train A for service.

At 1848 CDT, the operating crew restored RCS temperature to <350 degrees F and declared entry into MODE 4.

At 1900 CDT, the operating crew manually started Emergency Feedwater (EFW) Pump A [BA, P] to feed the Steam Generators [SG] to preserve the secondary heat sink with both Main Feedwater Pumps [SJ, P] and the Auxiliary Feedwater Pump unavailable due to the LOOP.

At 1933 CDT, SDC Train A was placed in service.

At 2211 CDT, SDC Train B was placed in service.

At 2338 CDT, the plant entered MODE 5 (Cold Shutdown) with RCS temperature </=200 degrees F.

On August 31, 2021, at 2330 CDT, offsite power was restored.

At 2345 CDT, the unusual event was exited since offsite power was restored to both safety-related electrical buses.

On September 30, 2021, an engineering evaluation to validate the RCS temperature excursion that occurred following the August 29, 2021 LOOP was completed. The evaluation concluded that the station did not exceed MODE 4 conditions based on the RCS average temperature (T_{avg}) not exceeding 350 degrees F.

This report is made pursuant to 10 CFR 50.73(a)(2)(iii) as any natural phenomenon or other external condition that posed an actual threat to the safety of the nuclear plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the nuclear power plant. This report is also made pursuant to 10 CFR 50.73(a)(2)(iv)(A) as any event or condition that resulted in manual or automatic actuation of the EFW system and EDGs.

Safety Assessment:

The LOOP is safety significant; however, the switchyard system operated as designed and disconnected transmission circuits from the switchyard buses when the integrity of the grid was challenged by the environmental conditions of Hurricane Ida. The plant was shutdown to MODE 4 in anticipation of a LOOP. Both EDGs started automatically and aligned to their respective safety buses as designed and thus provided electrical power for the other safety systems. Train A of EFW was manually started to feed the Steam Generators and operated normally until it was no longer needed, and was secured.

There were no significant equipment problems noted while maintaining shutdown conditions during and after the hurricane. Based on the above, the event did not have a significant effect on the health and safety of the public.

The potential consequence to general safety of the public, nuclear safety, industrial safety, and radiological safety of the LOOP event was eliminated by the mitigating action of the EDGs that started and loaded as required to support all necessary safety systems. Since the plant automatic response to the LOOP performed as required, there were no actual consequences to the general safety of the public, nuclear safety, industrial safety, or radiological safety for this event. Additionally, the EFW system was operated as directed by procedures to assist in plant cooldown and the system performed the function as designed.

Therefore, this event had minimal safety significance.

Event Cause(s):

The cause of the LOOP event was the damaging hurricane force winds, heavy rain, and localized flooding brought by Hurricane Ida. The effects of the hurricane resulted in damage to both sources of offsite power.

Corrective Actions:

The hurricane force winds experienced on August 29, 2021 were not considered a beyond design basis event. The systems and components responded as designed and the overall peak wind speeds were within the design basis for a hurricane event. The damage observed coincides with the amount of damage expected for the event. Given that this event was outside the control of Waterford 3 and that all components functioned as designed, no additional corrective actions beyond repair/recovery efforts related to the hurricane event are needed.

Previous Similar Events:

A review of the Waterford 3 corrective action program and LERs for the previous three years was performed. No similar events were found to be applicable.